COCONINO COMMUNITY COLLEGE
COURSE OUTLINE

Created by: Doug Fitzpatrick Date: January 14, 2020
Chad Davies
Effective Term: Fall 2020

A. **Identification:**

1. Subject Area: Engineering (EGR)
2. Course: 180
3. Course Title: Engineering Graphics
4. Credit Hours: 4
5. Catalog Description: Pre-requisite or Co-requisite: MAT 187 Pre-Calculus . Fundamentals of graphical communications, including sketching, computer-aided drafting, design, and parametric modeling. Three Lecture. Three Lab.

B. **Course Goals:**

Provide students with an introduction to engineering graphics for basic mechanical, civil, and environmental engineering. Prepare students with basic understanding of fundamentals of graphical communications, including sketching, computer-aided drafting, design, parametric modeling.

C. **Course Outcomes:**

Students will be able to:

1. Create solutions to complex engineering problems.
2. Apply principles of engineering through knowledge of Engineering Graphics fundamentals and principles.
3. Apply techniques developing solid mirror, pattern, ribs, and advanced solids.
4. Design drawings of Civil Engineering 3D, surfaces, alignments, profiles, earthwork and grading

D: **Course Outcomes Assessment**

Student assessment is done with exams, projects, homework assignments.

E. **Course Content:**

Will include:

1. Introduction to Engineering, engineering graphics, and engineering design.
2. Hand Orthographic sketching, CAD sketching, Views, line types.
3. Solids basics; extrude and revolve such as boss, rev solid, and cut.
4. Creating 2d drawings in CAD from 3D; 3D standard views, projection, sectional views.
5. Sketch relationships, symmetry, geometries, fillet, trim, offset, mirror, and patterns.

6. Drawing views, annotations.
7. Hole wizard, drawing hole callout
8. Solid mirror, patterns, ribs.
9. Advanced solids.
10. Three dimensional sketches.
11. Introduction to Civil 3D, surfaces, alignments, and Profiles
12. Civil 3D: Earthwork and Grading, Gravity pipe networks